

XCOM: Shale

Constituents (Atomic Number : Fraction by Weight)

Z=1 : 0.320000
 Z=8 : 0.380000
 Z=13 : 0.150000
 Z=14 : 0.150000

	PHOTON ENERGY	SCATTERING COHERENT	PHOTO- INCOHER.	PHOTO- ELECTRIC ABSORPTION	PAIR PRODUCTION IN NUCLEAR FIELD	PAIR PRODUCTION IN ELECTRON FIELD	TOTAL ATTENUATION WITH COHERENT SCATT.	TOTAL ATTENUATION WITHOUT COHERENT SCATT.
	(MeV)	(cm ² /g)	(cm ² /g)	(cm ² /g)	(cm ² /g)	(cm ² /g)	(cm ² /g)	(cm ² /g)
	1.000E-03	1.399E+00	2.346E-02	2.158E+03	0.000E+00	0.000E+00	2.160E+03	2.158E+03
	1.500E-03	1.273E+00	4.557E-02	7.286E+02	0.000E+00	0.000E+00	7.299E+02	7.286E+02
	1.560E-03	1.257E+00	4.833E-02	6.548E+02	0.000E+00	0.000E+00	6.561E+02	6.549E+02
13 K	1.560E-03	1.257E+00	4.833E-02	1.194E+03	0.000E+00	0.000E+00	1.195E+03	1.194E+03
	1.694E-03	1.222E+00	5.451E-02	9.740E+02	0.000E+00	0.000E+00	9.753E+02	9.740E+02
	1.839E-03	1.184E+00	6.114E-02	7.926E+02	0.000E+00	0.000E+00	7.939E+02	7.927E+02
14 K	1.839E-03	1.184E+00	6.114E-02	1.225E+03	0.000E+00	0.000E+00	1.226E+03	1.225E+03
	2.000E-03	1.142E+00	6.833E-02	1.019E+03	0.000E+00	0.000E+00	1.020E+03	1.019E+03
	3.000E-03	9.125E-01	1.070E-01	3.466E+02	0.000E+00	0.000E+00	3.476E+02	3.467E+02
	4.000E-03	7.385E-01	1.343E-01	1.567E+02	0.000E+00	0.000E+00	1.575E+02	1.568E+02
	5.000E-03	6.091E-01	1.532E-01	8.335E+01	0.000E+00	0.000E+00	8.411E+01	8.350E+01
	6.000E-03	5.106E-01	1.668E-01	4.932E+01	0.000E+00	0.000E+00	4.999E+01	4.948E+01
	8.000E-03	3.717E-01	1.848E-01	2.124E+01	0.000E+00	0.000E+00	2.180E+01	2.142E+01
	1.000E-02	2.814E-01	1.958E-01	1.092E+01	0.000E+00	0.000E+00	1.140E+01	1.112E+01
	1.500E-02	1.610E-01	2.101E-01	3.191E+00	0.000E+00	0.000E+00	3.562E+00	3.401E+00
	2.000E-02	1.055E-01	2.161E-01	1.311E+00	0.000E+00	0.000E+00	1.633E+00	1.527E+00
	3.000E-02	5.616E-02	2.191E-01	3.673E-01	0.000E+00	0.000E+00	6.425E-01	5.864E-01
	4.000E-02	3.488E-02	2.173E-01	1.472E-01	0.000E+00	0.000E+00	3.993E-01	3.644E-01
	5.000E-02	2.370E-02	2.137E-01	7.204E-02	0.000E+00	0.000E+00	3.094E-01	2.857E-01
	6.000E-02	1.712E-02	2.094E-01	4.006E-02	0.000E+00	0.000E+00	2.666E-01	2.495E-01
	8.000E-02	1.010E-02	2.004E-01	1.582E-02	0.000E+00	0.000E+00	2.264E-01	2.163E-01
	1.000E-01	6.654E-03	1.919E-01	7.690E-03	0.000E+00	0.000E+00	2.063E-01	1.996E-01
	1.500E-01	3.065E-03	1.738E-01	2.083E-03	0.000E+00	0.000E+00	1.789E-01	1.759E-01
	2.000E-01	1.751E-03	1.596E-01	8.343E-04	0.000E+00	0.000E+00	1.622E-01	1.604E-01
	3.000E-01	7.878E-04	1.391E-01	2.393E-04	0.000E+00	0.000E+00	1.401E-01	1.393E-01
	4.000E-01	4.452E-04	1.247E-01	1.033E-04	0.000E+00	0.000E+00	1.253E-01	1.248E-01
	5.000E-01	2.856E-04	1.139E-01	5.596E-05	0.000E+00	0.000E+00	1.143E-01	1.140E-01
	6.000E-01	1.985E-04	1.054E-01	3.497E-05	0.000E+00	0.000E+00	1.057E-01	1.055E-01
	8.000E-01	1.118E-04	9.264E-02	1.769E-05	0.000E+00	0.000E+00	9.276E-02	9.265E-02
	8.950E-01	8.936E-05	8.787E-02	1.422E-05	0.000E+00	0.000E+00	8.797E-02	8.788E-02
	1.000E+00	7.160E-05	8.331E-02	1.100E-05	0.000E+00	0.000E+00	8.339E-02	8.332E-02
	1.022E+00	6.856E-05	8.243E-02	1.035E-05	0.000E+00	0.000E+00	8.251E-02	8.244E-02
	1.250E+00	4.585E-05	7.449E-02	7.018E-06	1.885E-05	0.000E+00	7.456E-02	7.452E-02
	1.500E+00	3.184E-05	6.770E-02	5.082E-06	1.034E-04	0.000E+00	6.784E-02	6.781E-02
	1.800E+00	2.212E-05	6.132E-02	3.747E-06	2.726E-04	0.000E+00	6.161E-02	6.159E-02
	2.000E+00	1.791E-05	5.778E-02	3.175E-06	4.100E-04	0.000E+00	5.821E-02	5.820E-02
	2.044E+00	1.715E-05	5.707E-02	3.070E-06	4.419E-04	0.000E+00	5.753E-02	5.751E-02

3.000E+00	7.963E-06	4.545E-02	1.758E-06	1.169E-03	1.590E-05	4.664E-02	4.664E-02
4.000E+00	4.480E-06	3.792E-02	1.199E-06	1.892E-03	6.493E-05	3.988E-02	3.988E-02
5.000E+00	2.867E-06	3.275E-02	9.059E-07	2.537E-03	1.294E-04	3.542E-02	3.541E-02
6.000E+00	1.991E-06	2.894E-02	7.261E-07	3.115E-03	1.987E-04	3.226E-02	3.226E-02
7.000E+00	1.463E-06	2.601E-02	6.054E-07	3.629E-03	2.679E-04	2.991E-02	2.991E-02
8.000E+00	1.120E-06	2.368E-02	5.186E-07	4.092E-03	3.351E-04	2.810E-02	2.810E-02
9.000E+00	8.849E-07	2.176E-02	4.534E-07	4.513E-03	3.996E-04	2.668E-02	2.668E-02
1.000E+01	7.168E-07	2.017E-02	4.027E-07	4.894E-03	4.611E-04	2.552E-02	2.552E-02
1.100E+01	5.924E-07	1.881E-02	3.621E-07	5.241E-03	5.193E-04	2.457E-02	2.457E-02
1.200E+01	4.977E-07	1.764E-02	3.290E-07	5.559E-03	5.745E-04	2.377E-02	2.377E-02
1.300E+01	4.241E-07	1.662E-02	3.013E-07	5.855E-03	6.266E-04	2.310E-02	2.310E-02
1.400E+01	3.657E-07	1.572E-02	2.779E-07	6.130E-03	6.762E-04	2.253E-02	2.253E-02
1.500E+01	3.186E-07	1.492E-02	2.579E-07	6.388E-03	7.233E-04	2.204E-02	2.204E-02
1.600E+01	2.800E-07	1.421E-02	2.405E-07	6.630E-03	7.685E-04	2.161E-02	2.161E-02
1.800E+01	2.212E-07	1.299E-02	2.120E-07	7.073E-03	8.523E-04	2.092E-02	2.092E-02
2.000E+01	1.792E-07	1.198E-02	1.895E-07	7.469E-03	9.288E-04	2.038E-02	2.038E-02
2.200E+01	1.481E-07	1.113E-02	1.713E-07	7.829E-03	9.995E-04	1.996E-02	1.996E-02
2.400E+01	1.244E-07	1.040E-02	1.563E-07	8.157E-03	1.065E-03	1.962E-02	1.962E-02
2.600E+01	1.060E-07	9.763E-03	1.437E-07	8.457E-03	1.126E-03	1.935E-02	1.935E-02
2.800E+01	9.142E-08	9.208E-03	1.329E-07	8.735E-03	1.182E-03	1.913E-02	1.913E-02
3.000E+01	7.964E-08	8.720E-03	1.237E-07	8.992E-03	1.235E-03	1.895E-02	1.895E-02
4.000E+01	4.480E-08	6.929E-03	9.184E-08	1.005E-02	1.459E-03	1.844E-02	1.844E-02
5.000E+01	2.867E-08	5.786E-03	7.301E-08	1.085E-02	1.634E-03	1.827E-02	1.827E-02
6.000E+01	1.991E-08	4.982E-03	6.058E-08	1.148E-02	1.777E-03	1.824E-02	1.824E-02
8.000E+01	1.120E-08	3.930E-03	4.519E-08	1.244E-02	2.000E-03	1.837E-02	1.837E-02
1.000E+02	7.167E-09	3.262E-03	3.604E-08	1.313E-02	2.170E-03	1.856E-02	1.856E-02
1.500E+02	3.185E-09	2.323E-03	2.392E-08	1.427E-02	2.468E-03	1.906E-02	1.906E-02
2.000E+02	1.792E-09	1.822E-03	1.790E-08	1.497E-02	2.667E-03	1.946E-02	1.946E-02
3.000E+02	7.963E-10	1.291E-03	1.191E-08	1.582E-02	2.928E-03	2.003E-02	2.003E-02
4.000E+02	4.480E-10	1.011E-03	8.923E-09	1.631E-02	3.093E-03	2.042E-02	2.042E-02
5.000E+02	2.867E-10	8.370E-04	7.135E-09	1.664E-02	3.210E-03	2.069E-02	2.069E-02
6.000E+02	1.991E-10	7.167E-04	5.943E-09	1.688E-02	3.298E-03	2.089E-02	2.089E-02
8.000E+02	1.120E-10	5.597E-04	4.455E-09	1.720E-02	3.423E-03	2.118E-02	2.118E-02
1.000E+03	7.167E-11	4.605E-04	3.562E-09	1.741E-02	3.507E-03	2.138E-02	2.138E-02
1.500E+03	3.185E-11	3.216E-04	2.374E-09	1.771E-02	3.637E-03	2.167E-02	2.167E-02
2.000E+03	1.792E-11	2.489E-04	1.780E-09	1.788E-02	3.711E-03	2.184E-02	2.184E-02
3.000E+03	7.963E-12	1.730E-04	1.186E-09	1.806E-02	3.793E-03	2.202E-02	2.202E-02
4.000E+03	4.480E-12	1.336E-04	8.897E-10	1.816E-02	3.841E-03	2.214E-02	2.214E-02
5.000E+03	2.867E-12	1.092E-04	7.117E-10	1.822E-02	3.872E-03	2.220E-02	2.220E-02
6.000E+03	1.991E-12	9.263E-05	5.931E-10	1.827E-02	3.893E-03	2.225E-02	2.225E-02
8.000E+03	1.120E-12	7.134E-05	4.448E-10	1.832E-02	3.921E-03	2.231E-02	2.231E-02
1.000E+04	7.167E-13	5.825E-05	3.559E-10	1.836E-02	3.940E-03	2.236E-02	2.236E-02
1.500E+04	3.185E-13	4.025E-05	2.372E-10	1.840E-02	3.965E-03	2.241E-02	2.241E-02
2.000E+04	1.792E-13	3.095E-05	1.779E-10	1.843E-02	3.978E-03	2.244E-02	2.244E-02
3.000E+04	7.963E-14	2.135E-05	1.186E-10	1.846E-02	3.993E-03	2.248E-02	2.248E-02
4.000E+04	4.480E-14	1.639E-05	8.896E-11	1.848E-02	4.003E-03	2.250E-02	2.250E-02
5.000E+04	2.867E-14	1.335E-05	7.116E-11	1.848E-02	4.006E-03	2.250E-02	2.250E-02
6.000E+04	1.991E-14	1.128E-05	5.930E-11	1.849E-02	4.012E-03	2.251E-02	2.251E-02
8.000E+04	1.120E-14	8.651E-06	4.448E-11	1.850E-02	4.015E-03	2.252E-02	2.252E-02
1.000E+05	7.167E-15	7.036E-06	3.558E-11	1.850E-02	4.018E-03	2.253E-02	2.253E-02

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